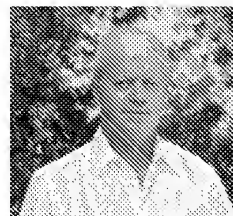


Gérald Pourcelly, 63 years

Professor of Physical Chemistry at the University of Montpellier 2
 Research Group: "Ionic Transport ; Electroseparations" at IEM
 Associate Professor at the University of Laval, Québec since 2002
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EDUCATION

Chemist qualified to the level of Engineer (ESCIL 1970), Lyon, France
 Ph.D. "Contribution to the electrolysis of anhydrous $\text{NH}_3\text{-HF}$ mixtures for the production of fluorine", INSA-University of Lyon (1976)

RESEARCH TOPICS

Physical Chemistry of Ionic Materials : Polymeric ion exchange membranes, resins and textiles involved in membrane processes ; Physico-chemical and electrochemical characterizations ; Transport modelling ; Material modifications.

Membrane Processes : Dialysis ; Conventional and bipolar electrodialysis in both aqueous and hydro-organic solutions ; Electrodialysis with resins or textiles ; Membrane electrolysis ; Electropemutation, Fuel cells .

SELECTED PAPERS (among 135 in international journals; h-index: 24)

"Identification of the ionic species in anion exchange membranes equilibrated with sulphuric acid solutions by means of Raman spectroscopy and radiotracers". I.Tugas, G.Pourcelly, J.Maillols, J.L.Bribes and C.Gavach, *J.Membrane Sci.*, 78(1993) 25-33

"Transport competition between monovalent and divalent cations through cation-exchange membranes. Exchange isotherms and kinetic concepts". A.Chapotot, G.Pourcelly and C.Gavach, *J.Membrane Sci.*, 96(1994) 167-181

"Improvement of the selectivity of Nafion membranes by surface treatment". C.Combellas, F.Kanoufi, J.L.Gineste, J.Séta, C.Gavach, G.Pourcelly, *New J.Chem.*, 21(1997) 1219-1227

"Chronopotentiometric response of an ion-exchange membrane in the underlimiting current range. Transport phenomena within the diffusion layers", P.Sistat, G.Pourcelly, *J.Membrane Sci.*, 123 (1997) 121-131

"Oxidation by electrogenerated mediator. Influence of perfluorosulfonic separators on process performances", S.Logette, C.Eysseric, P.Huguet, C.Gavach, G.Pourcelly, *J.Applied Electrochemistry*, 29(1999)371-381

"Electrochemical and Raman Spectroscopy Study of Nafion Perfluorosulphonic Membrane in Organic Solvent-Water Mixtures", J.Ethève, P.Huguet, J.L.Bribes, G.Pourcelly, *J.Phys.Chem. B.* 105(2001) 4151-4154

« Elaboration par PECVD d'une nouvelle génération de membranes échangeuses de protons pour piles à combustible miniatures », S.Roualdès, P.Sistat, J.Durand, G.Pourcelly, C.Plissonier, D.Marsacq, Intégration des membranes dans les procédés, 89 (2003) pp 237-244, *Récents Développements en Génie des Procédés*, Lavoisier Tec-Doc ISBN 2-910239-63-2.

"Chronopotentiometry applied to the study of ion transfer through anion exchange membranes", N.Pismenskaia, P.Sistat, P.Huguet, V.Nikonenko, G.Pourcelly, *J.Membrane Sci.*, 228(2004) 65-76.

"Ion mobility in Nafion-117 membranes", I. A. Stenina, P. Sizat, A. I. Rebrov, G. Pourcelly, A. B. Yaroslavtsev, *Desalination*, 170 (2005) 49-57

"New proton conductive membranes for miniaturized PEMFC", A.Majhoub, S.Roualdès, P.Sizat, N.Pradeilles, J.Durand, G.Pourcelly, *Fuel Cells*, 5(2), (2005) 277-286

"Effects of Magnesium/Calcium ratio in solutions subjected to electrodialysis. Characterization of cation-exchange membrane fouling", C.Casademont, G.Pourcelly and L.Bazinet, *J.Coll Interf.Sci.* 315 (2007) 544-554

"Coupled Convection of solution near the surface of IEM in intensive current regimes", N.Pismenskaia, V.Nikonenko, E.Belova, G.Lopatkova, Ph.Sizat, G.Pourcelly, C.Larchet, *Russian J.Electrochem.*, 43 (2007) 307-327

"Low frequency impedance of an ion exchange membrane system". P.Sizat, A.Kozmai, N.Pismenskaya, C.Larchet, G.Pourcelly, V.Nikonenko, *Electrochimica Acta* 53 (2008) 6380-6390

"Effect of Magnesium/Calcium ratios in solutions treated by ED. Morphological characterization and identification of anion-exchange membrane fouling". C.Casademont, G.Pourcelly, L.Bazinet, *J.Coll Interf.Sci.*, 322 (2008) 215-222

"Low frequency impedance of an ion exchange membrane system". P.Sizat, A.Kozmai, N.Pismenskaya, C.Larchet, G.Pourcelly, V.Nikonenko, *Electrochimica Acta* 53 (2008) 6380-6390

"Analysis of the main components of the aguamiel produced by the maguey-pulquero (Agave mapisaga) throughout the harvest period". Ortiz-Basurto R., Pourcelly G., Doco Th., Williams P., Dornier M., Belleville MP. *Agri Food Chem.* 56 (2008) 3682-3687

"Deacidification of passion fruit juice by electrodialysis with bipolar membrane after different pretreatments". E.Vera, J.Sandeaux, F.Persin, G.Pourcelly, M.Dornier, J.Ruales, *J.Food.Eng.* 90(2009)67-73

"Electrodialysis of model salt solutions containing whey protein. Enhancement by pulsed electric field and modified cell configuration". C.Casademont, P.Sizat, B.Ruiz, G.Pourcelly, L.Bazinet, *J.Membrane Sci.* 328(2009)338-345

"Intensive current transfer in membrane systems: modelling, mechanisms an applications in electrodialysis", V.Nikonenko, N.Pismenskaia, E.Belova, P.Sizat, P.Huguet, G.Pourcelly, C.Larchet, *Adv. Interf. Colloid. Sci*, 160(2010)101-123

"Diffusion layer thickness in a membrane system as determined from voltammetric and chronopotentiometric data", A.E.Kozmai, V.V.Nikonenko, N.D.Pismenskaia, O.D. Pryakhina, P.Sizat, G.Pourcelly, *Russian J.Electrochem.* 46(2010) 1383-1389

"Membranes for low and medium temperature fuel cells. State-of-the Art and new trends", G.Pourcelly, *Petroleum Chemistry*, 51(2011)480-491

"Impact of pulsed electric field on ED process performance and membrane fouling during consecutive demineralization of a model salt solution containing a high Mg/Ca ratio". N.Cifuentes-Araya, G.Pourcelly, L.Bazinet, *J.Coll Interf Sci.*, 361(2011)79-89

RECENT BOOK CHAPTERS

"Development of bipolar membrane technology in food and bio-industries", G. Pourcelly, L. Bazinet, To be published in *Handbook of membrane Separation, Chemical, Pharmaceutical and Biotechnological Applications*, Marcel Dekker Publishers, 2008

"Ion transfer in and through charged membranes. Structure, properties and theory." V.V.Nikonenko, A.B.Yaroslavtsev and G.Pourcelly, in: *Ionic Interactions in natural and Synthetic Macromolecules*, Ed A.Ciferri and A.Perico, John Wileys & Sons 2012

"Applications of charged membranes in separation, fuel cells and emerging processes", G.Pourcelly, V.V.Nikonenko, N.D.Pismenskaia and A.B.Yaroslavtsev, in: *Ionic Interactions in natural and Synthetic Macromolecules*, Ed A.Ciferri and A.Perico, John Wileys & Sons 2012

RECENT INVITED LECTURES IN INTERNATIONAL CONFERENCES

"Ion exchange membranes. Prospects in dynamic characterization and electromembrane processes", Permea 2007, Siofolk (HG), 2-6 september 2007, *Keynote lecture*

"Electromembrane processes for water desalination. State of the art and new trends". G.Pourcelly, P.Sistat, P.Huguet, S.Lacour, Euromed 2008, 9-13 November 2008, Dead Sea *Keynote lecture*

"Membranes for Proton Exchange Membrane Fuel Cells". G.Pourcelly, PERMEA 2010, Slovaquia, 6-10 Sept. 2010, *Plenary lecture*.

"Materials for PEMFC: State of the art and new trends". MATERIAUX 2010, 18-22 Oct 2010, Nantes, *Invited Conference*

RECENT AND ON-GOING Ph-D AS SUPERVISOR

« Elaboration et assemblage d'électrolytes céramiques à conduction protonique pour électrolyse de vapeur à haute température et haute pression », CIFRE AREVA, Johan Loricourt (April 2011)

« Optimisation des conditions opératoires du traitement du lait par procédés électromembranaires, réduction du colmatage et de la précipitation », Nicola Cifuentes-Araya, (50 %), co direction Pr L.Bazinet, INAF, Université Laval, soutenance scheduled Spring 2012, Québec.

« Etude de l'électroréduction de CO₂ entre 400 et 600 °C par adsorbats d'hydrogène » CIFRE AREVA, Abdelkader Sirat co-direction with Dr B.Sala, Expert AREVA (scheduled fall 2012), Montpellier

ORGANIZATION OF RECENT CONFERENCES AS CONFERENCE CHAIRMAN

"Euromed 2006, Desalination Strategies in South Mediterranean Countries", Montpellier, May 2006,

"Euromembrane 2009", Montpellier, 6-10 September 2009,

"8th Colloquium of the CNRS Interdisciplinary Energy Program", Montpellier 28-30 March 2011,

OTHERS

Director of the "European Membrane Institute" (IEM) 2003-2010

Editorial Boards of "*The Journal of Membrane Science*" and "*Desalination and Water Treatment*"

Cluster Leader of "Fuel Cells and Hydrogen" in the Energy Programme of CNRS

Director of the CNRS research grouping n°3339 "Fuel cell & Systems: PACS" 2010-2013

President of the Steering Committee of ANR H-PAC (2009 and 2010).

Director of the Russian-French International Associated laboratory "Ion Exchange Membranes and Associated Processes", MEIPA (2011-2014)

Expertise domains: Electromembrane processes applied to agro&food industry, water treatment, environment concerns, energy